

LOESCHE WASTE CONDITIONING



LOESCHE WASTE CONDITIONING IN BRIEF:

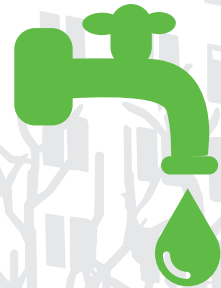
Old Dumpsites

- Remediation
- Stabilisation
- Integrated Approach



New Projects / Green Field Plants

- **Best Quality AF**
- **Sustainable Solutions**
- **Modular Construction Kit**
- **Unsorted MSW**
- **High Quality Products**
- **Green and Clean**
- **Biogas Production on Request**
- **Energy Production on Request**



STABILISING EXISTING LANDFILLS

Depending on their age, history and location, existing landfills can sometimes be unstable, resulting in the possibility of serious problems occurring.

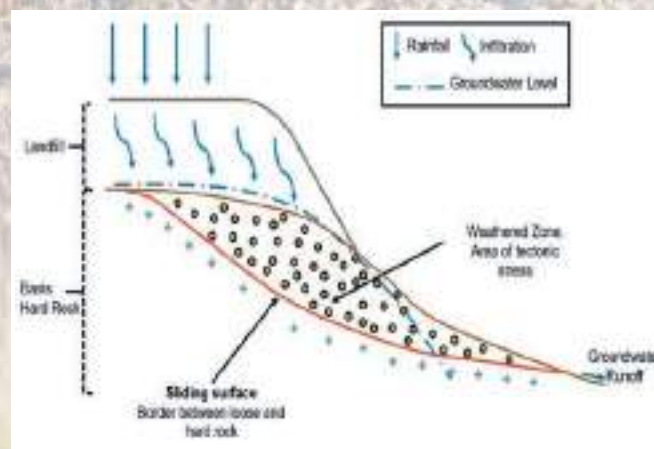
When conditions become critical, slopes can fail, leading to landslides that can flood nearby areas with waste material. Aside from the possibility of human casualties, it is expensive to repair damaged buildings and infrastructure, not to mention the clean-up costs involved.

Because of this, old landfills need to be stabilised as a first step before remediation can take place. They can then form a new resource for recovering their valuable content, which can include metals, plastics, paper, and other recyclable materials.

Before carrying out any stabilisation, the reasons for the instability of the landfill must be identified, and then removed.

“LOESCHE has the expertise to carry out surveys to identify the factors that could lead to failures occurring, and those involved in existing instability.” These factors could include:

- Geology
- Topography
- Ground conditions
- Tectonic stresses
- Hydrology
- Hydrogeology
- and other factors.





After an initial geotechnical model of a slope failure or landslide has been developed, it can then be verified by sample drilling and by further examination and calculation. This forms the basis for identifying suitable methods for stabilising the existing landfill mass, taking the specific conditions into account, so that future failures can be prevented, and people and the environment are protected.

Following on from this, LOESCHE will use the results to develop a detailed plan to carry out the stabilisation work, taking into consideration all the relevant technical factors as well as safety (such as explosion protection) and environmental aspects.

For example, possible counter-measures against future landslides could include:

- Dewatering systems and waste-water management;
- Flattening the landfill slopes;
- Reducing the landfill height; and
- Further measures.



REMEDIATION OF EXISTING LANDFILLS

Provided that a landfill is stable, it can be used as a resource to recover valuable contents that would otherwise be lost, as well as causing environmental contamination.

Sometimes, landfills that were originally located outside the borders of a town or city have since been incorporated in it through suburban growth. LOESCHE has the expertise to remediate existing landfills.

The aim is to achieve a sustainable and environmentally friendly solution to this, while maximising the benefits and minimising the amount of material that has to be returned for final landfilling.





Advantages:

- Recovering valuable materials (plastic, paper, metals, glass, and so on) that would otherwise be lost;
- Composting or stabilising the organic fraction to avoid the potential for methane or CO₂ emissions, and leachate run-off;
- Reducing the volume for re-landfilling by recovering the valuable contents and treating the organic fraction;
- Disposing of residual material in a new sanitary landfill that is designed using state-of-the-art technology with proper sealing, drainage systems, and so on. Harmful environmental impacts are eliminated; and
- Complete rehabilitation of the area for further use (parks, etc).

MUNICIPAL SOLID WASTE

The conditioning and handling of Municipal Solid Waste (MSW) requires a lot of expert knowledge, since the waste properties and composition will vary widely depending — amongst other reasons — on the geographical location and the season.

Because of this, a tailor-made solution has to be found to optimise the waste-treatment process and the utilisation of the conditioned waste in energy intensive industries (e.g. cement, power plants), taking the specific conditions of each project into account.

With its extensive expertise, LOESCHE can help you to convert waste into profit by benefitting from the valuable material in the waste:

- The high-caloric fraction of the waste (mainly plastic) can be separated and used to produce high-quality fuel for various industries, reducing their energy costs;
- Ferrous and non-ferrous metals can be separated and sold for scrap recycling;
- Depending on the quality of the waste, the organic fraction can be processed to produce compost;
- Bio-gas can be produced from the organic fraction (optionally).
- Electrical energy generated from high quality fuels by a waste-to-energy plant (optionally),



Fuel Pellets



RDF /SRF



Compost



Scrap Metals

POSSIBLE OUTPUT MATERIALS



As well as providing a high level of flexibility, performance and availability – as is standard for LOESCHE's products and systems – the mechanical and biological waste-conditioning plant offers these advantages:

- Treating UNSORTED household waste – Municipal Solid Waste (MSW). Since no presorting is needed, this is ideal for cities that have not yet implemented waste separation in their collection system. It is also suitable for the remediation of old landfills containing mixed waste.
- Providing high selectivity of the fuel-rich fraction from the wet organic content, plus one stage size reduction of the input waste using LOESCHE's Cascade Mill.
- Separating out "Valuables" – metals, the high-caloric fraction and other components for recycling.
- Producing high-quality fuels (RDF, SRF or pellets) from the high-caloric fraction (HCF), for use in cement and/or power plants.
- Converting the organic fraction into compost, which can be used as fertiliser or greenery (depending on the quality of the input waste).



COMPLETE TREATMENT PLANTS

The LOESCHE Waste-Conditioning Plant is designed as a set of modular construction kits to provide the greatest flexibility and adaptability to your needs.

- Handling high-moisture MSW with up to 55% water content, where other equipment fails.
- Initial decomposition of the organic fraction reduces the composting time from three months to three weeks, as well as reduces odour emissions.
- Moisture levels are reduced by around 15-20 % during grinding in the Cascade Mill and Rocket Mill®.
- Sewage sludge / leachates can be added to the Cascade Mill feed at rates of around 8 t/h of sludge to 12 t/h of MSW, depending on the materials' moisture contents.

Different technological set-ups available in modular form according to specific needs

- Biogas can be produced, using the fermentation plant kit.
- Energy can be produced, using the waste-to-energy plant kit.
- Fuels produced in the plant can be compacted for cost-effective transport, using pelletiser or baler kits.

Loesche – worldwide presence

Loesche is a privately owned, export-orientated company that was established in Berlin in 1906. Today the company operates internationally with subsidiaries, representatives and agencies worldwide.

Our engineers are constantly developing new ideas and individual concepts for grinding technologies and preparation processes for the benefit of our customers. Competence is achieved through our worldwide information management. This ensures that current knowledge and developments can also be used immediately for our own projects.

The services of our subsidiaries and agencies are of key importance for analysing, processing and solving specific project problems for our customers.

Please visit our homepage at www.loesche.com for up-to-date information on our overseas companies.



Loesche GmbH

Hansaallee 243
40549 Düsseldorf, Germany
Tel. +49 - 211 - 53 53 - 0
Fax +49 - 211 - 53 53 - 500
Email: loesche@loesche.de
www.loesche.com

